

PROPOSED USE OF THE PLENARY POWERS TO VALIDATE A NEOTYPE FOR THE NOMINAL SPECIES "CANCER OCULATUS" FABRICIUS (O.), 1780, TO DESIGNATE THE SPECIES SO NAMED TO BE THE TYPE SPECIES OF THE GENUS "MYSIS" LATREILLE, [1802-1803] (CLASS CRUSTACEA, ORDER MYSIDACEA) AND MATTERS INCIDENTAL THERETO

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The purpose of the present application is to ask the International Commission on Zoological Nomenclature to use its Plenary Powers to provide a valid basis for the continued use of the generic name *Mysis* Latreille, [1802-1803] (Class Crustacea, Order Mysidacea) in its accustomed sense. This is a well-known and important genus, having ten species currently assigned to it and being distributed through the northern parts of the Northern Hemisphere and with one more species described from South Georgia. It is also the type genus of the family MYSIDAE. This generic name has been in continuous use since it was erected, i.e. for about 150 years, and it would be very confusing and undesirable if this long-established practice were to be disturbed. Finally, the generic name *Mysis* has been taken as the base for the Ordinal name Mysidacea. The action needed in order to prevent disturbance from occurring is, first, that the Plenary Powers should be used to designate as the type species of this genus a well-known species possessing the characters recognized as diagnostic of this genus. There is, however, some doubt as to how the nominal species now recommended for designation as the type species of this genus should be interpreted and the Commission is being asked to set that doubt at rest by using its Plenary Powers to validate the neotype for that species which is designated in the Annexe to the present application. Finally, the Commission is being asked to use the same Powers to suppress the specific name of the nominal species which is at present the type species of this genus, the nominal species so named being unrecognizable and its specific name in consequence a *nomen dubium*. The facts of this case are set out in the following paragraphs.

2. In the year 1780, Otto Fabricius (*Fauna groenl.*) described two crustacean species, viz. *Cancer pedatus* (: 243) and *Cancer oculatus* (: 245). Of the latter, an incomplete figure was also given. In 1781, Fabricius (*K. Danske Vid. Selsk. Skr.* (n.s.) 1) published figures and descriptions of both species (: 561-565 and fig. 1, and : 565-567 and fig. 2, resp.). A facsimile reproduction of Fabricius' 1780 figure of *Cancer oculatus* is annexed to the present paper as Figure (1). Similar reproductions of Fabricius' 1781 figures both of the above species and of his nominal species *Cancer pedatus* are annexed as Figure (2).

3. In the year [1802-1803¹], Latreille (*Hist. nat. gén. partic. Crust. Ins.* 3 : 36) established a new genus, *Mysis*, for *Cancer pedatus*, and referred *C. oculatus* to the same genus. Eight years later Latreille (1810, *Consid. gén. Anim. Crust. Arach. Ins.* : 422) in his "Table des genres avec l'indications de l'espèce qui sert de type" writes as follows: "*Mysis. Cancer pedatus*, Oth. Fab." thus definitely selecting *pedatus* Fabricius as the type of his genus *Mysis*.

4. The difficulties arising in the present case are as follows:—

- (a) The type material for both of Fabricius's species has disappeared.
- (b) From the description by Krøyer (1861, *Naturhist. Tidsskrift* (3) 1 : 13-21 41) and from the figures published earlier by him (1846, (?) in Gaimard, *Voyages Scand. Lap.* : pl. 8, fig. 2, 3) it was up till now considered possible to identify the species which has ever since been called *oculatus*. Almost all of Krøyer's material has also been lost.
- (c) Another species of the same genus, *Mysis mixta* Lilljeborg, 1852, is abundant in Greenland waters. Fabricius's figure of *C. oculatus* from the year 1781 (fig. 2) may have been drawn from a specimen of this species.
- (d) *Cancer pedatus* O. Fabricius is difficult to identify. In most cases it has been identified with *Cancer oculatus* O. Fabricius, but doubts as to its identity have been raised on several occasions, although nobody has ventured to state that he could identify it with certainty. Leach (1830, *Trans. Plymouth Inst.* 1 : 176-178) seems to have had some material to hand (this material, too, is no longer traceable) and he describes the species under the name of *Megalophthalmus fabricianus*, adding a note which runs "*Cancer pedatus*, Othonis Fabricii, Faun. Graen. 243, No. 221". Later authors have generally referred this species, just as *Cancer pedatus*, to either *Mysis mixta* Lilljeborg, 1852, or, mostly, to *Mysis oculata*.

5. Recent studies have raised doubts in me as to the correctness of the identification of *C. pedatus* as a mysid. It appears more likely that it is some kind of Euphausiacea for several reasons of which the more important are set out below.

- (a) Fabricius writes "thorace laeui compresso". The cephalothorax in the genus *Mysis* is not laterally compressed, but it is so in euphausiaceans.

¹ The volume (Volume 3) of the *Hist. nat. gén. partic. Crust. Ins.* in which the name *Mysis* Latreille was published is dated "An X" in the French Revolutionary Calendar and has in consequence commonly been treated as having appeared in the period September 1801-September 1802. Griffin (F.J.) (1938, *J. Soc. Bibl. nat. Hist.* 1 : 157) has shown, however, that this volume was not published until "An XI" and therefore that names published in it should be dated "September 1802-September 1803". (Int'l'd F.H.)

- (b) He writes "cauda tereti recta", but the abdomen is not straight in *Mysis*. It is somewhat bent downwards in its first part and the opposite way a little farther backwards. These bends are absent in euphausiaceans. The figures given by Fabricius in 1781 illustrate these characters very distinctly.
- (c) Fabricius says that the abdomen has small, two-segmented legs. In *Mysis* they are unsegmented, except the third and fourth pleopods of the males which have quite another structure. In Euphausiacea the basis of the pleopods is two-segmented and supplied with an unsegmented exopod and endopod.
- (d) Fabricius mentions *Cancer pedatus* as a whale-food and says that the species occurs "stupenda multitudine". These facts would fit the oceanic euphausiaceans much better than the more coastal specimens of *Mysis*. Also, euphausiaceans occur abundantly in Greenland waters.

6. Matters have, however, become still more complicated since I have found that two species have been confused under the name *M. oculata*, both of which occur along the Greenland coast. One of these species it is possible to identify with *Mysis oculata* as described by Krøyer, and it would seem natural, therefore, to establish a neotype of the said species on one of Krøyer's specimens. The other species has proved to be identical to *Pugetomysis litoralis* Banner, 1948 (*Trans. Roy. Canad. Inst.* 27 (No. 57) : 104-106, pl. VI, fig. 18).

7. The specimen of *Cancer oculatus* Fabricius (O.), 1780, now selected as a neotype is described in detail in the annexe to the present paper. It is preserved in the Zoological Museum of the University of Copenhagen. Figures are given of the cephalothorax (Fig. A) and of the telson (Fig. B) of the neotype. In addition, corresponding figures are given as Figures C and D respectively of the specimen here selected as the lectotype of *Pugetomysis litoralis* Banner, 1948.

8. In order to ensure that the nomenclature of the genus *Mysis* shall remain stable, the name *pedatus* Fabricius, 1780, as published in the combination *Cancer pedatus*, should, as an unrecognisable *nomen dubium*, be suppressed under the Plenary Powers and placed on the *Official Index of Rejected and Invalid Specific Names in Zoology*. Similar action should be taken in the case of its junior objective synonym *fabricianus* Leach, 1830, as published in the combination *Megalophthalmus fabricianus*. Finally, the neotype now designated for *Cancer oculatus* Fabricius, 1780, should be validated under the Plenary Powers and the species so defined should be designated under the same Powers to be the type species of *Mysis* Latreille, [1802-1803]. The specific name *oculatus* Fabricius and the generic name *Mysis* Latreille should then be placed on the appropriate *Official Lists*.

9. Further, the name *Pugetomysis* Banner, 1948, should be put on the *Official List* with a note that it is available for use by those regarding *Mysis oculata* (O. Fabricius) and *Pugetomysis litoralis* (Banner) as generically distinct. Also, the specific name *litoralis* Banner, as thus used, should be put on the *Official List*.

10. It is desirable also that the present opportunity should be taken to dispose of the generic name *Megalophthalmus* Leach, 1830 (*Trans. Plymouth Inst.* 1 : 176), the type species of which by monotypy is the nominal species *Megalophthalmus fabricianus* Leach, 1830, the specific name of which is *nomen dubium* and has been recommended in paragraph 8 for suppression under the Plenary Powers. It is accordingly recommended that the name *Megalophthalmus* Leach, 1830, as being a name for an unrecognisable genus should be suppressed under the Plenary Powers for the purposes of the Law of Priority but not for those of the Law of Homonymy. This name should then be placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*, together with the following junior homonyms :—*Megalophthalmus* Gray (G.R.), 1832 (*in* Griffith's Cuvier, *Anim. Kingd.* 14 : 371) and *Megalophthalmus* Lorenz, 1906 (*Z. deutsche geol. Ges.* 58 : 62).

11. The problems of the names on the family-group level remain to be considered. The first author to introduce such a name based on the generic name *Mysis* seems to have been Burmeister (1837, *Handb. Naturgesch.* (Abt. 2) : 566) using the spelling *MYSIDA* as a family name. Since Burmeister adds the letters "M.E." after the family name, it would appear possible that he has got it from Milne-Edwards, but I have not succeeded in tracing any such name as used by that author. The spelling *MYSIDAE* was introduced by Dana (1850, *Amer. J. Sci.* (2) 9 : 129-130), and this spelling seems to be the correct one, adding the termination "-idae" to the stem of the generic name *Mysis*. The spelling *MYSIDAE* has been generally accepted.

12. For the reasons set out in the present application the International Commission on Zoological Nomenclature is asked :—

(1) to use its Plenary Powers :—

(a) to suppress the under-mentioned names for the purposes of the Law of Priority, but not for those of the Law of Homonymy :—

(i) the specific name *pedatus* Fabricius (O.), 1780, as published in the combination *Cancer pedatus* [a *nomen dubium*];

(ii) the specific name *fabricianus* Leach, 1830, as published in the combination *Megalophthalmus fabricianus* (a junior objective synonym of the name specified in (i) above);

- (iii) the generic name *Megalophthalmus* Leach, 1830 [of which the type species is *Megalophthalmus fabricianus* Leach, 1830], a nominal species, the specific name of which it is proposed under (a)(ii) above should now be suppressed under the Plenary Powers ;
 - (iv) the generic name *Megalophthalmus* Gray (G.R.), 1832 (a junior homonym of *Megalophthalmus* Leach, 1830) ;
 - (v) the generic name *Megalophthalmus* Lorenz, 1906 (a junior homonym of *Megalophthalmus* Leach, 1830) ;
 - (b) to validate the neotype for the nominal species *Cancer oculatus* Fabricius (O.), 1780, designated in the Annexe to the present application ;
 - (c) to set aside all type selections for the nominal genus *Mysis* Latreille, [1802–1803], made prior to the Ruling now asked for, and, having done so, to designate the nominal species *Cancer oculatus* Fabricius (O.), 1780, as defined in (b) above, to be the type species of the above genus ;
- (2) to place the under-mentioned generic names on the *Official List of Generic Names in Zoology* :—
- (a) *Mysis* Latreille, [1802–1803] (gender : feminine) (type species, by designation under the Plenary Powers, as proposed in (1)(c) above : *Cancer oculatus* Fabricius (O.), 1780, as proposed to be defined under the Plenary Powers in (1)(b) above) ;
 - (b) *Pugetomysis* Banner, 1948 (gender : feminine) (type species, by monotypy : *Pugetomysis litoralis* Banner, 1948, as interpreted by the lectotype selected in paragraph 7 of the present application) (for use by those specialists who consider that the nominal species *Pugetomysis litoralis* Banner, 1948, and *Cancer oculatus* Fabricius, 1780 (type species of *Mysis* Latreille, [1802–1803]) are not congeneric with one another) ;
- (3) to place the under-mentioned specific names on the *Official List of Specific Names in Zoology* :—
- (a) *oculatus* Fabricius (O.), 1780, as published in the combination *Cancer oculatus* and as proposed in (1)(b) above to be defined under the Plenary Powers (specific name of type species of *Mysis* Latreille, [1802–1803]) ;
 - (b) *litoralis* Banner, 1948, as published in the combination *Pugetomysis litoralis*, and as defined by the lectotype specified in (2)(b) above (specific name of type species of *Pugetomysis* Banner, 1948) ;

(4) to place the under-mentioned specific names on the *Official Index of Rejected and Invalid Specific Names in Zoology* :—

(a) *pedatus* Fabricius (O.), 1780, as published in the combination *Cancer pedatus*, as proposed in (1)(a)(i) above to be suppressed under the Plenary Powers ;

(b) *fabricianus* Leach, 1830, as published in the combination *Megalophthalmus fabricianus*, as proposed in (1)(a)(ii) above to be suppressed under the Plenary Powers ;

(5) to place the under-mentioned generic name on the *Official Index of Rejected and Invalid Generic Names in Zoology* :—

Megalophthalmus Leach, 1830, as proposed in (1)(a)(iii) above to be suppressed under the Plenary Powers ;

(6) to place the under-mentioned family-group name on the *Official List of Family-Group Names in Zoology* :—

MYSIDAE (correction of MYSINA) Burmeister, 1837 (type genus : *Mysis* Latreille, [1802–1803]) (first published in correct form as MYSIDAE by Dana (1850)) ;

(7) to place the under-mentioned family-group name on the *Official Index of Rejected and Invalid Family-Group Names in Zoology* :—

MYSINA Burmeister, 1837 (type genus ; *Mysis* Latreille, [1802–1803]) (an Invalid Original Spelling for MYSIDAE).

ANNEXE

Neotype of “ *Mysis oculata* ” (O. Fabricius) 1780

(Figs. A and B)

Description : Carapace produced in front as a rounded angle.

Eyes : large.

Antennular peduncle : with the third segment about half as long as the first one, the second about half the length of the third.

Antennal scale : about five to six times as long as broad, setose all round ; apex rounded ; a slight distal suture is present ; peduncle of flagellum about half the length of the scale ; on the distal outer corner of the sympod there is a spine.

Labrum : not drawn out anteriorly to a spine.

Maxilla : with the distal segment of the endopod expanded ; the distal margin armed with a dense row of strong barbed spines, all of which are of about the same length. Along this row of spines, on the proximal side of the segment, there is a row of setae, four or five in number.

Second maxillipede : with the distal segment of the endopod rounded, armed with strong barbed spines or claws leaving proximally an unarmed portion of only about one-fifth of the segment ; also supplied with long setae.

Third to eighth thoracic limbs : with carpopropodus divided into eight to nine segments, armed with strong barbed spines and long setae ; basal plate of exopod with a short and stout spine at the outer distal corner.

Uropod : inner margin of the endopod with five to nine spines, the proximal ones near to the statocyst and the distal one about one-third the length of the endopod from the apex.

Telson : lateral margins armed with more than twenty spines, evenly distributed along the whole margin and not leaving any unarmed portion distally ; distal to the base of the apical cleft there are four to eight spines, less numerous in small specimens as is usual with spines in mysids ; the proximal end of the apical cleft evenly rounded ; the angle of the cleft measures about 2° – 50° being broadest in small animals (386 specimens investigated, 27.5–4 mm.) ; the distal lobes of the telson are broad quite to the apex, distally evenly rounded ; the two chromatophores are situated about one-third the length of the telson from the base, only occasionally they are irregularly placed. See also note in explanation of Figure B on page 60.

Length of adults : 15–28 mm.

Neotype : adult ♀ 20 mm. (Zool. Mus., Copenhagen, Denmark).

Label inside the tube containing Neotype : The following label² has been placed in tube containing the Neotype :—

Godhavn. Fra Maven af Gadus ogek 17/5 62 Olrik. Studssml. ded.

Mysis oculata (O. FABRICIUS) sensu KRØYER. Neotype. Ch. Holmquist.

Remarks

The characters most significant for distinguishing the two species *Mysis oculata* (Fabricius, 1780) and *Pugetomysis litoralis* Banner, 1948, which have hitherto been confused are : the form and armature of the telson, the form of the front margin of the carapace, the somewhat larger eyes in *M. oculata*, and the differences in the armature of the endopod of the second maxillipedes. *Mysis oculata* seems on the whole to be much more strongly armed than *M. litoralis*. The two species are found mostly in localities of somewhat different kinds. When they are found together the members of the one species are usually much more frequent than those of the other species.

² The following amplified translation of the label placed in the tube containing the neotype has been kindly furnished by Dr. Henning Lemche of the Universitetets Zoologiska Museum, Copenhagen, the Institution in which the specimen is preserved :—

Godhavn. From the stomach of *Gadus ogek*, 17/5–62. Olrik [the collector of the sample in question]. Formerly part of the collection used for teaching students at the University of Copenhagen

Mysis oculata (O. FABRICIUS) sensu KRØYER. Neotype. Ch. Holmquist

Explanation of Figures (1) and (2)

Fig. (1) Facsimile reproductions from Fabricius (O.), 1780, Faun. groenl.

Cancer oculatus : 2 figs. published by Fabricius as Fig. 1, A and B.

Fig. (2) Facsimile reproductions from Fabricius (O.), 1781, K. Danske Vid Selsk. Skr. (n.s.), vol. 1

Cancer pedatus : 2 figs. published by Fabricius as Fig. 1, A and B.

Cancer oculatus : 2 figs. published by Fabricius as Fig. 2, A and B.

(Note : The above facsimile reproductions are of approximately the same size size as when the figures were published by Fabricius.)



Figure (1) : Facsimile reproduction of a figure numbered Fig. 1, A and B from Fabricius, 1780

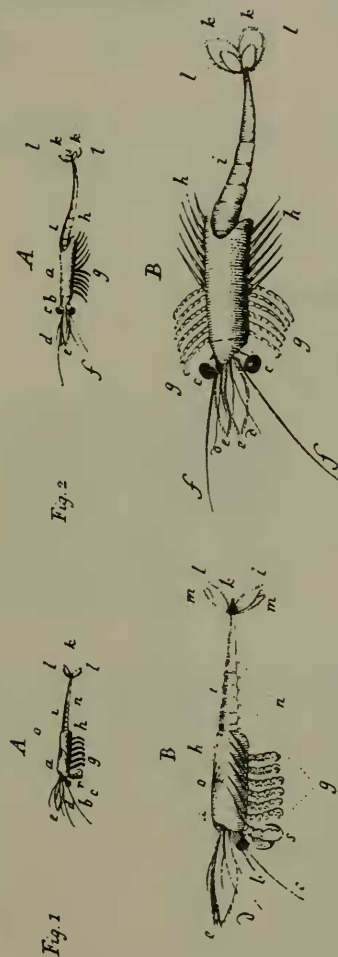


Figure (2) : Facsimile reproduction of two figures numbered Fig. 1, A and B and Fig. 2, A and B respectively from Fabricius, 1781

Explanation of Figures A to D

(drawings by Ch. Holmquist)

Figs. A and B : " *Cancer oculatus* " Fabricius (O.), 1780

(= *Mysis oculata* (Fabricius (O.), 1780))

(preparations made from the neotype specimen)

Fig. A Cephalothorax

Fig. B Telson

Note : The telson of this species bears two chromatophores similar to those present in *Mysis litoralis* (Banner, 1948) (Fig. D below). In old specimens, however, these structures are often dissolved and this is what has occurred in the case of the Neotype of *Mysis oculata* (Fabricius (O.), 1780). It is for this reason that these structures are not shown in Fig. B.

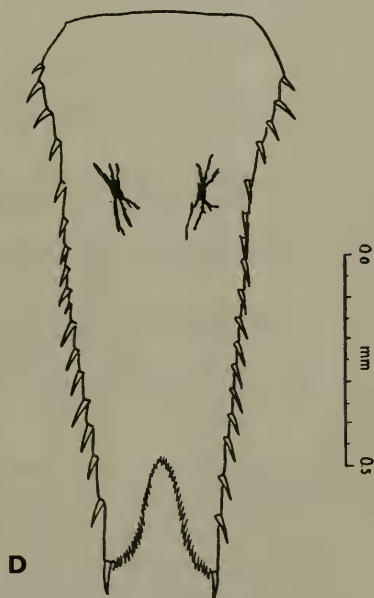
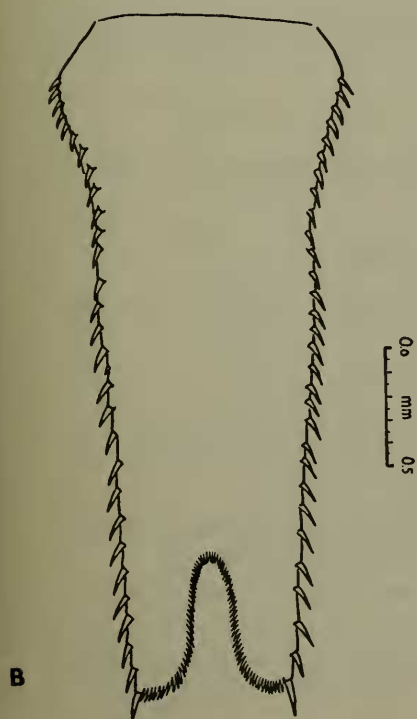
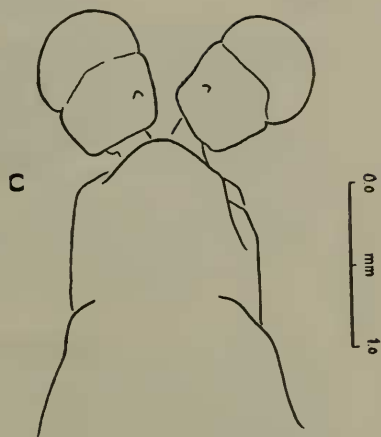
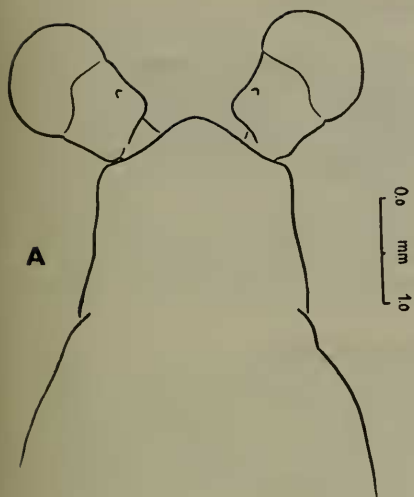
Figs. C and D : " *Pugetomysis litoralis* " Banner, 1948

(= *Mysis litoralis* (Banner, 1948))

(preparations made from the lectotype specimen)

Fig. C Cephalothorax

Fig. D Telson



Figs. A and B: *Mysis oculata* (Fabricius (O.), 1780)

Figs. C and D: *Mysis litoralis* (Banner, 1948)

(For explanation see page opposite.)